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EXAMINER

NWAONICHA, CHUKWUMA O

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 29 December 2009.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 1-12 and 14-23 are under active consideration in the instant application.

The 112 rejection in the previous Office Action is withdrawn following Applicants amendment.

The 102 rejection in the previous Office Action is withdrawn following Applicants amendment.

The 103 rejection of claims 1-12 and 22 is withdrawn following Applicants amendment. The prior arts of record do not disclose nor teach a silica sol as defined in claim 14 and the process for making a silica sol as defined in claim1; that is, a silica sol having a specified BET surface area as claimed, a specified percent by weight content of guanidinium ions, a specified percent by weight content of SiO₂, which is free of amine.

This application is a 371 of PCT/EP03/07235 07/07/2003.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having

Art Unit: 1621

ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 14-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Du Pont De Nemours and Company, {GB 1202303} in view of Andersson et al., {US 5,603,805}.

Applicants claim a silica sol having a BET surface area of from 100 to 1200 m²/g; wherein all the variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Du Pont De Nemours and Company teaches applicants claimed silica sol and non-aluminum modified prepared by reaction a comprises a BET surface area in excess of 100 m²/g and comprising reacting a silica with guanidine compound in the presence of a base at a reaction temperature of about 79°C; wherein all the variables are as defined in the specification. See page 2, column 1, lines 27-50, page 3, column 1, lines 1-55, page 3, column 2, lines 89-120, and Examples 1 and 2.

On the other hand, Andersson et al. teach applicants claimed silica sol prepared by reaction a sol in the presence of a base comprising alkali water glass, sodium water glass and potassium water glass. Andersson et al. silica sol is aluminum modified,

Art Unit: 1621

non-aluminum modified and utilized in the production of paper. See column 2: lines 57-67, columns 4 and 5, the working examples and the claims.

Ascertainment of the difference between the prior art and the claims (M.P.E.P.. §2141.02)

Du Pont De Nemours and Company and Andersson et al. silica sol differs from the instantly claimed silica sol in that Applicants claim recite the properties of the silica sol comprises from 0.05 to 15% by weight of guanidinium ions and up to 15% by weight of SiO₂, based on the total weight of the silica sol while Du Pont De Nemours and Company and Andersson et al. teach silica sol with similar properties.

Finding of prima facie obviousness--rational and motivation (M.P.E.P.. §2142-2143)

The instantly claimed silica sol would have been suggested to one of ordinary skill in view of the teaching of Du Pont De Nemours and Company and Andersson et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the properties SiO₂ from the teachings of Du Pont De Nemours and Company and Andersson et al. to arrive at the instantly claimed silica sol by reacting guanidine compound with a sol in the presence of a base. Said person would have been motivated to practice the teaching of the references cited because they demonstrates that silica sol are useful industrial raw materials, especially in paper industry. The Examiner notes that variation the reaction conditions, for example, batch/continuous, concentration of the reactants, catalyst, temperature and pressure in a chemical reaction is a well-known chemical practice to optimize the

Art Unit: 1621

process efficiency of the system and does not constitute a patentable distinction absent unexpected or unobvious results. Additionally, simply reversing the order of steps in a multi-step process is not a patentable modification absent unexpected or unobvious results. Ex parte Rubin, 128 U.S.P.Q. 440 (P.O.B.A 1959).

Moreover, all the claimed elements were known in the prior art references cited and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art. Also, the prior art teaches a silica concentration of at least 15% by weight (see, e.g., column 2, first full paragraph), which overlaps with the claimed range of up to 15%. In addition, the prior art teaches that the guanidinium ions might be present at a molar ratio of 0.65:1 relative to the silicate ions. Guanidinium and SiO_2 have roughly the same molecular weight. Therefore, if SiO_2 is present at 15% by weight I believe that guanidinium would be present at about 9.75% by weight at 0.65:1 molar ratio. Both of the prior art ranges overlap with the range required by the claims. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).

Allowed Claims

Claims 1-12 and 22 are allowable over the prior art of record.

Reason For Allowance

The following is an examiner's statement of reasons for allowance: Applicant claims a process for making a silica sol having a specified BET surface area as claimed, a specified percent by weight content of guanidinium ions, a specified percent by weight content of SiO₂, which is free of amine; wherein all the other variables are as defined in the claims. The process for making the silica sol was neither found to be obvious nor anticipated by the prior art of record.

Applicants' amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

Art Unit: 1621

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chukwuma O. Nwaonicha/
Examiner, Art Unit 1621

/PORFIRIO NAZARIO GONZALEZ/
Primary Examiner, Art Unit 1621

for Daniel Sullivan
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